

The Kimock et al. reference does not meet the limitation present in Applicants' claims reciting that the substrate contains "an exterior coating of a continuous silicon oxynitride...etc."

Contrary to what the Examiner contends at pages 2 through 3 of the Official Action, the Kimock et al reference does not teach "the silicon oxynitride as an outer external layer" in Example AA.

There are a number of differences between Kimock, et al. and the present invention. Column 7, line 50 of Kimock et al. states:

"Most preferably, interlayer 2 is composed of silicon oxynitride. In no case would the low friction layer 32 and the interlayer 2 which is bonded directly to low friction layer 3 be of the same material."

It is important to note at this stage of discussion that the objective of Kimock et al. is to obtain a low friction material.

Figure 1 of Kimock et al. depicts interlayer 2 on substrate 1 with low friction layer 3 on top of intermediate layer 2. Column 4, lines 63 - 65 refers to "a first interlayer 2 (or adhesion mediating layer)."

Kimock et al. teach away from Applicants' invention. Kimock et al. teach silicon oxynitride as an adhesion mediating layer, not as an outer layer or an outer layer exposed to environmental wear as claimed by Applicants. Kimock et al. teach at column 3, lines 2 - 7, "This invention provides a coated substrate product with superior abrasion wear resistance and reduced chemical reactivity. More particularly, this invention provides a coating of low friction diamond-like carbon..." Kimock et al. provide no teaching of the suitability of silicon oxynitride for abrasion and wear resistance and reduced chemical activity which is deposited on the substrate or article as an external layer.

The Examiner in the recent Official Action has applied Example AA from the Kimock et al. disclosure for the proposition that it discloses silicon oxynitride as an outer layer. This assertion is incorrect. Example AA does disclose the production of an article. However, this article so produced is an intermediate article. This conclusion is supported by reading the cited Example AA carefully.

Example AA utilizes 4 pieces of tempered float glass for use in laser bar scanners. These were surface cleaned and exposed in a vacuum to SiO₂ deposited by reactive ion beam sputter deposition. Then the coated plates were contacted with silicon oxynitride in the vacuum chamber. The plates were removed then from the vacuum chamber and Kimock et al. describe the properties of the articles, (i.e. Vickers microhardness, Vickers hardness, etc.).

The ultimate and penultimate sentences in Example AA are very important with respect to what Kimock et al. are teaching. They state at that location:

“After being rubbed with a sharp piece of glass the coating exhibited many optical imperfections and defects, indicative of damage induced by galling or glass “welding” to the coating surface. The sliding friction between the sharp glass and the silicon-oxynitride coated substrate was very high.”

This Example AA does no more than disclose an intermediate product. This intermediate product is then used as the starting material in Example BB. The quoted excerpt immediately above from Kimock et al. clearly shows that the article so produced in Example AA is not suitable for use as a finished product where they point out the deficiencies thereof. Note that in Example BB the starting article obtained from Example AA (that is described as having optical imperfections after being rubbed and has a high sliding friction) “has a low friction zirconium oxide layer applied as a top coating to the coated glass plates from Example AA.” Thus Examples AA and BB must be considered in their entirety, as Example AA by itself

is not suitable for the use desired by Kimock et al. Note that Kimock et al. state at column 3, lines 4 - 6 that “the invention.. provides a coating of low friction...material.” The emphasis is on “low friction” as that feature is what they want to achieve in their product. They do not achieve “low friction” in their product from Example AA (“The sliding friction between the sharp glass and the silicon-oxynitride coated substrate was very high.”). Example AA thus clearly teaches away from the use of the Silicon oxynitride as the outer or external coating. In fact according to Kimock et al., Applicants use of the silicon oxynitride as the external coating provides an unexpected result, which is “invention.” The claimed structure of Applicants invention

The inconsistencies between what Kimock et al. teach and what Applicants claim provide the basis for the assertion by Applicants there is not anticipation of Applicants claimed structure as a matter of law.

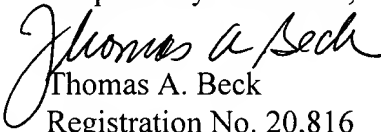
Claims 10 and 11 are not anticipated as they also recite that the layer is exposed to “environmental wear” much like the limitations found in claims 1 and 9 which cover “an exterior layer.”

In view of the arguments and modifications to the claims, allowance of this case is warranted. Such favorable action is respectfully solicited. Applicants have attempted to comply with the Examiner's suggestions to place the case into condition for allowance of the claims. If, in the opinion of the Examiner, additional or modified language is needed to succeed in this respect, the Examiner is respectfully requested to contact Applicant's attorney by telephone at the number listed below to resolve any outstanding issues.

If the claims are not in condition for allowance by virtue of the arguments submitted herein and if the above-identified application will be abandoned without further action by Applicants, Applicants hereby file a Notice of Appeal to the Board of Appeals and Interferences appealing the final rejection of the claims in the above-identified Examiner's

action. Please grant an extension of time of two months within which to respond. Please charge deposit Account 02-1651 for any charge necessary to extend the time and/or to appeal this case.

Respectfully Submitted,



Thomas A. Beck

Registration No. 20,816

26 Rock Ledge Lane

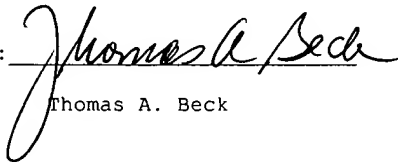
New Milford, CT 06776

Telephone (860) 354-0892

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Thomas A. Beck

Date: October 31, 2000